Audio Tool

A solution for the audio managing

Babelvic
BABEL GAMES | WEB

Audio Tool

Overview

That tool is a solution for managing all the audio of the project without programming at any time.

- We have created the definitive Unity audio management tool.

- With it you can forget about the code to add your audio tracks to your game.

- The main thing is that you can easily set all the audio for your project, and configure it.

- You can automatically set events and subscribe them to the tracks too.

AUDIO TOOL is made up of two great components, **Audio Manager** for configuring all the mixers and tracks. And **Audio Player**, which gives you the option to subscribe to any event of your scripts, or even to create it without the need for code at any time.

We have developed a graphical interface, in which without programming, you can easily add tracks and mixers. The tool itself is responsible for automatically generating the necessary audio sources.

This component gives you the option to subscribe any event that you have at any script into the actual GameObject, or even to create those events without having to code at any time.

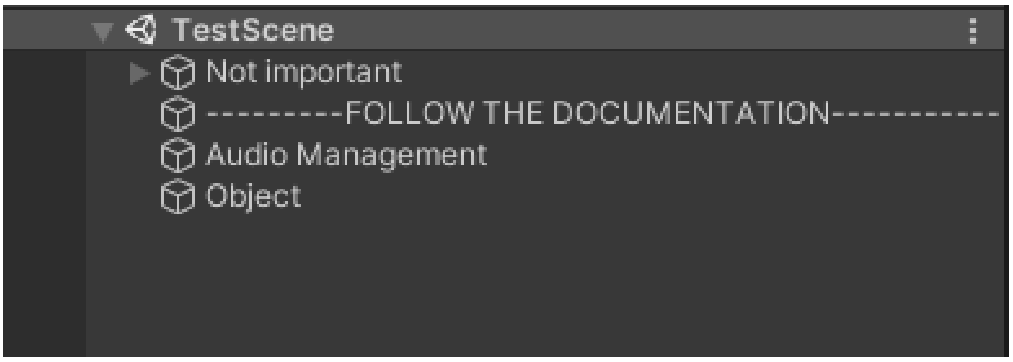
Getting Started

Welcome to the Audio Tool documentation in which you can learn how to implement this tool into your project and save a lot of your time.

For a better understanding we have prepared a test scene inside the package so that you can see for yourself what it is capable of and how easy it is to manage the audio of a project.

Go to the package folder, open the Tests folder, and at the Testing Scene folder you can find the test scene. Open it.

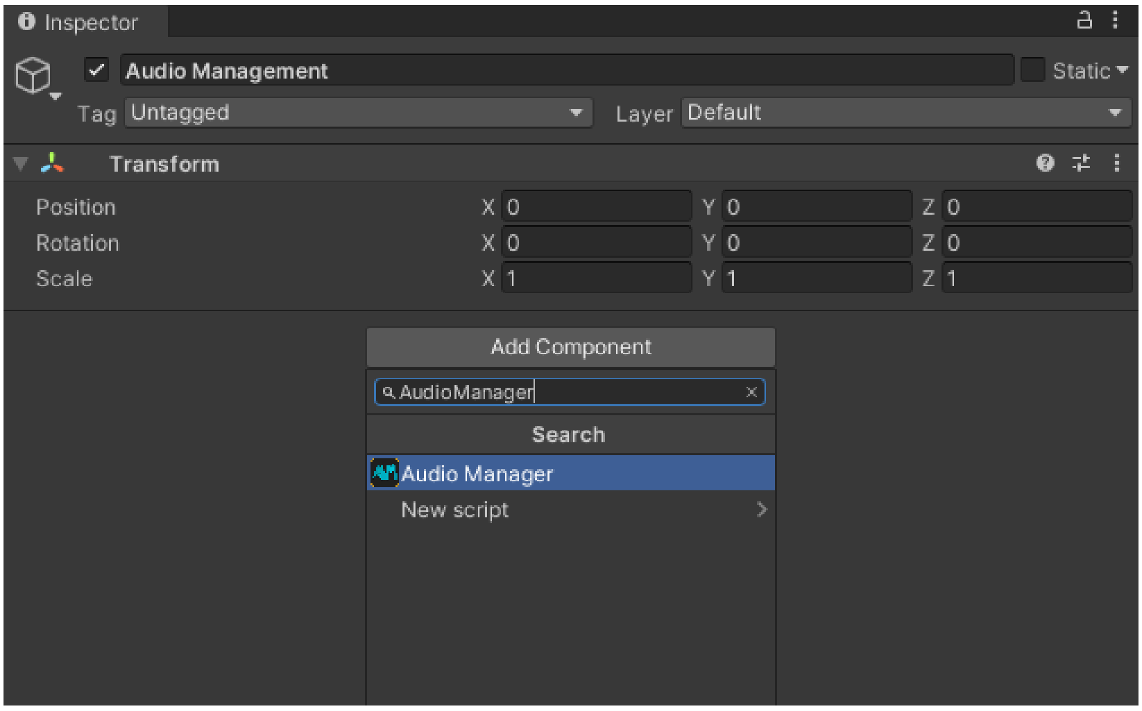
Now take a look at the hierarchy. As you can see you have two empty objects previously created for this tutorial. The Audio Management and the Object.



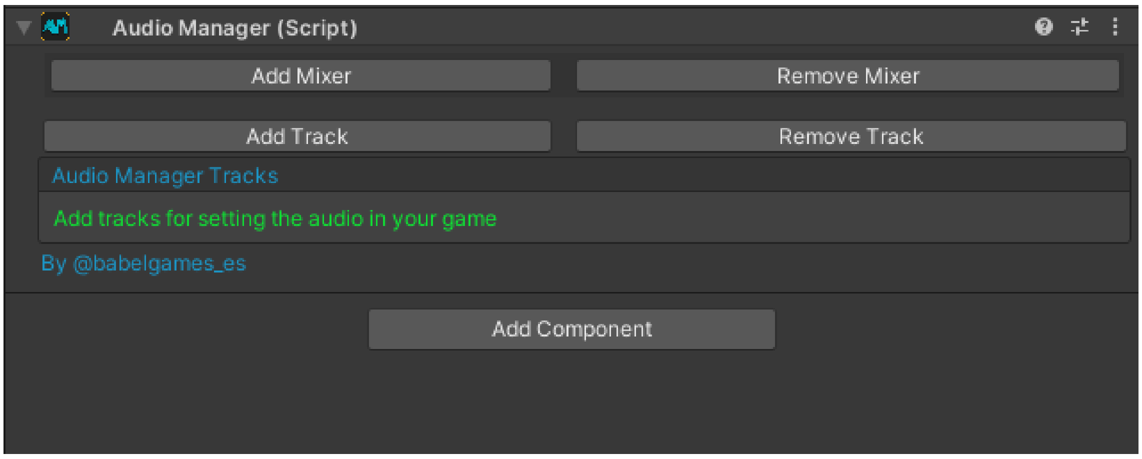
The first step is to configure the audio of the project so you are going to need the AudioManager component.

Audio Manager

Add the component to the Audio Management object.



The first look of the component is like this. When you've added the component now you can configure all the tracks that you want for your project.

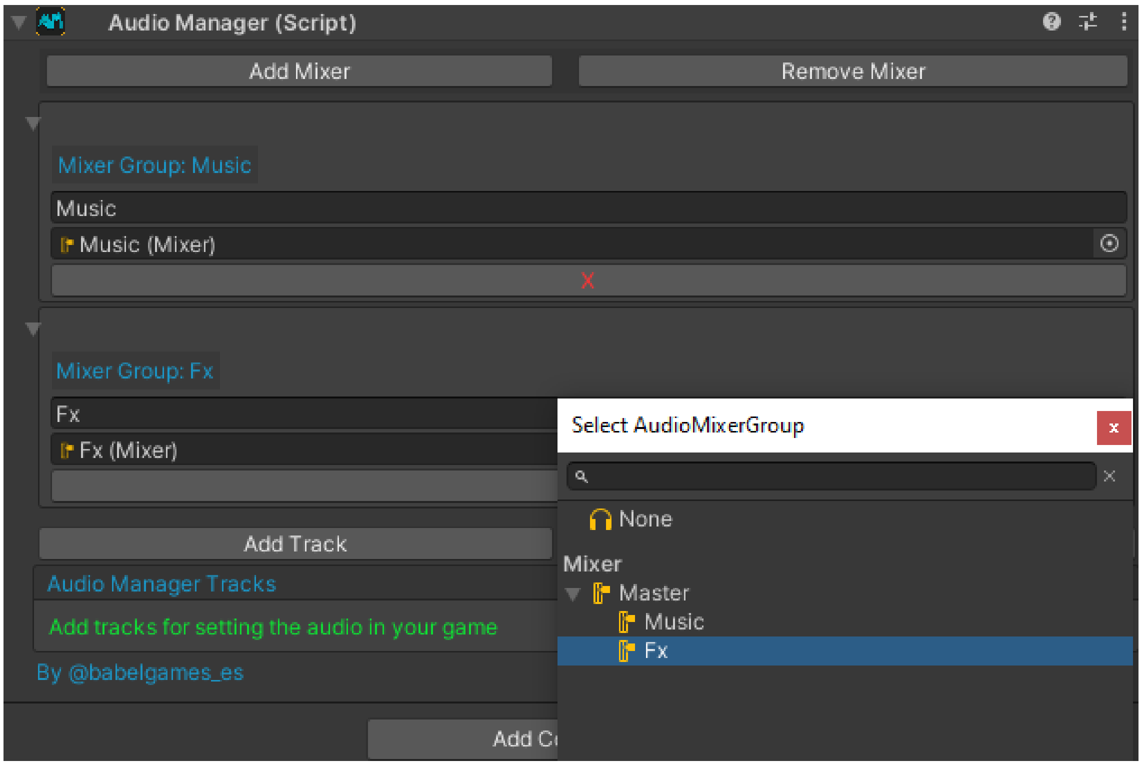


In our case, we are going to add four tracks. But first, we need to add the mixers.

If you don't know how to add mixers, please check the unity documentation or watch our demo video at the asset store.

We already created one for this tutorial (located at the Tests\Runtime\AudioTests as Mixer) so you don't need to create it if you don't want to.

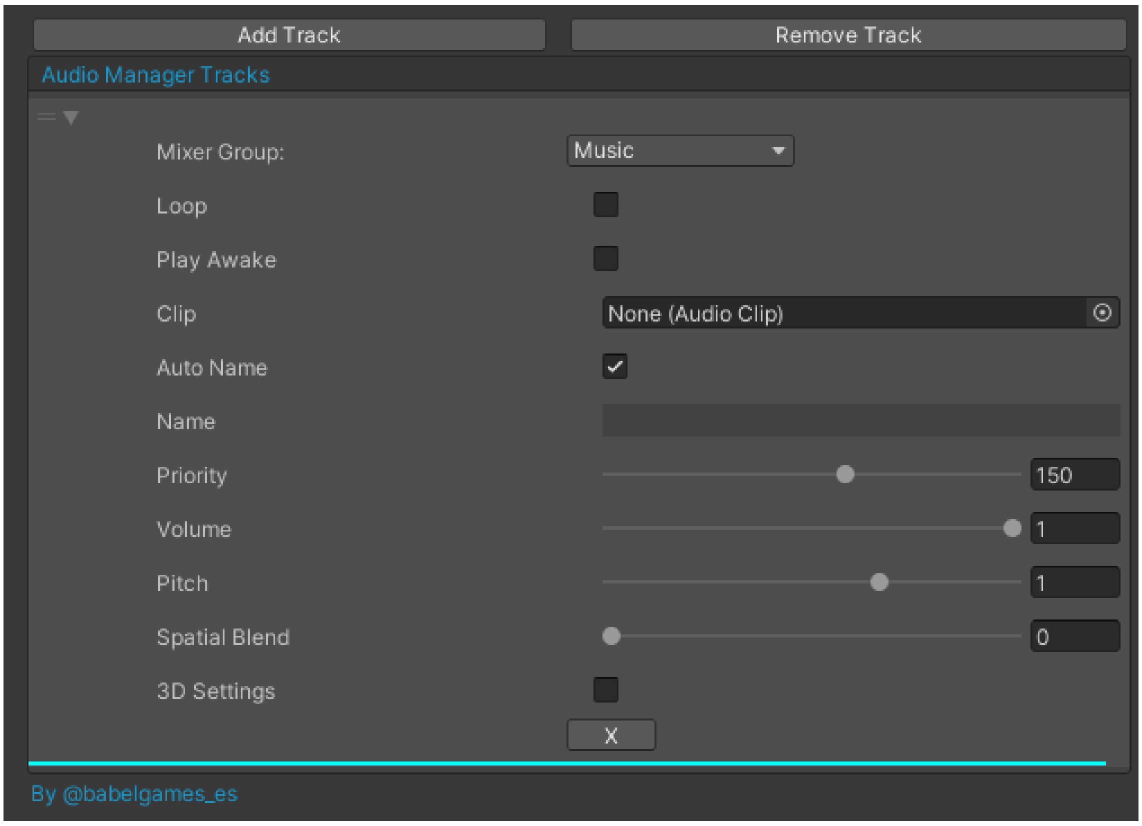
So, let's set our audio. First add two mixers, open them and put at the mixer references the created groups (Music and Fx).



You can see that when you put the mixer in the reference the group takes the name. That's for use in that list as a reference for the next configuration at the tracks.

You can remove any mixer by the remove button (delete the last reference at the list) or by the X button (deleting the actual mixer reference).

Once you have all the mixers setted, now you can add the first track. Add the track and open it.



Add Track | Remove Track

Audio Manager Tracks

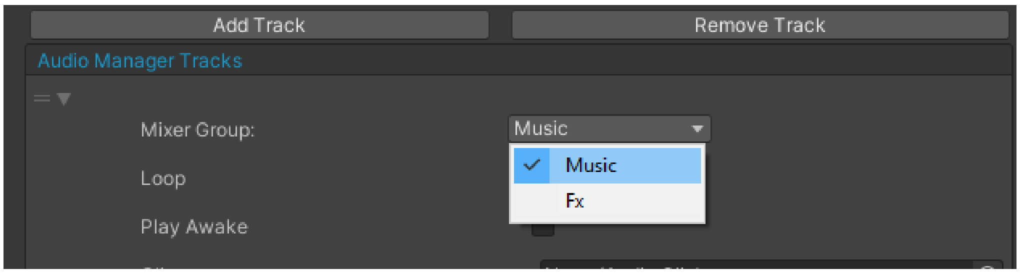
Mixer Group:	Music
Loop	☐
Play Awake	☐
Clip	None (Audio Clip)
Auto Name	✓
Name	
Priority	150
Volume	1
Pitch	1
Spatial Blend	0
3D Settings	☐

X

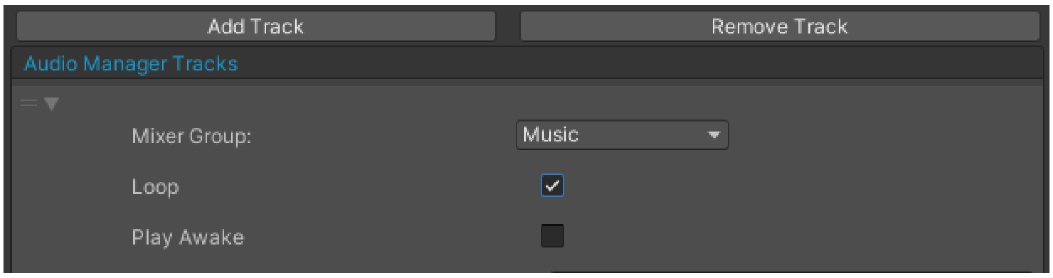
By @babelgames_es

As you can see, there are plenty of fields that you can configure. All these fields will be passed to an audio source at the start of the game.

- The first step is to set the mixer, so select the mixer that you previously referenced in the mixer list. For the first one we are going to select the Music mixer.



- Then you can see two toggles for loop the audio, and for playing it in the awake. For this track we only want to set the loop.

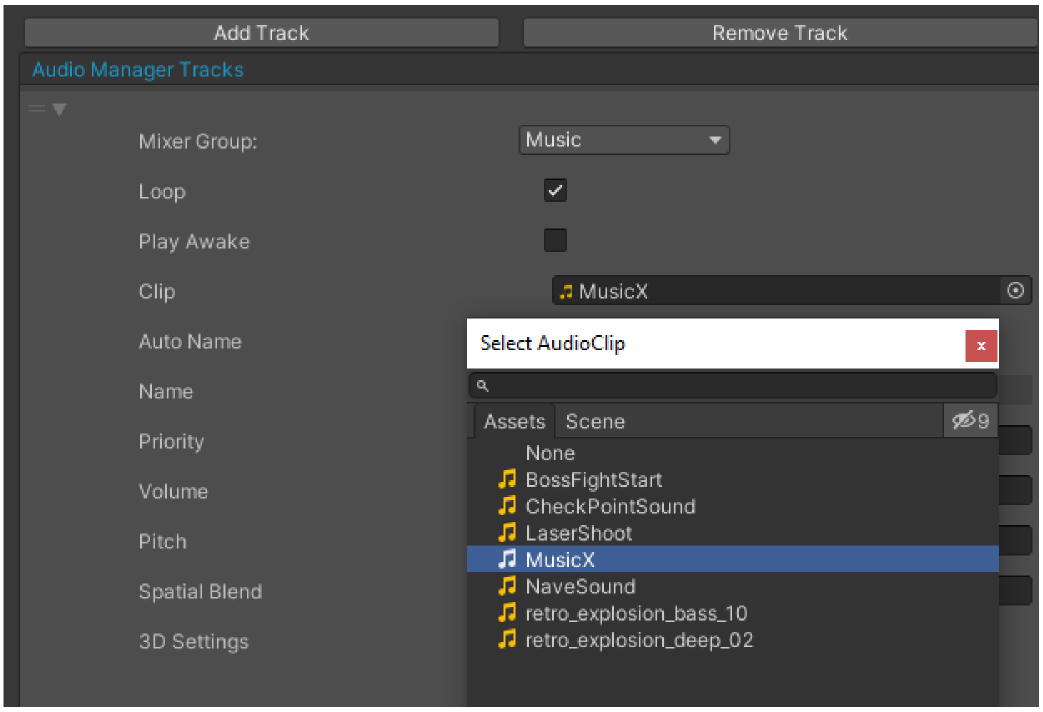


Add Track | Remove Track

Audio Manager Tracks

Mixer Group:	Music
Loop	✓
Play Awake	☐

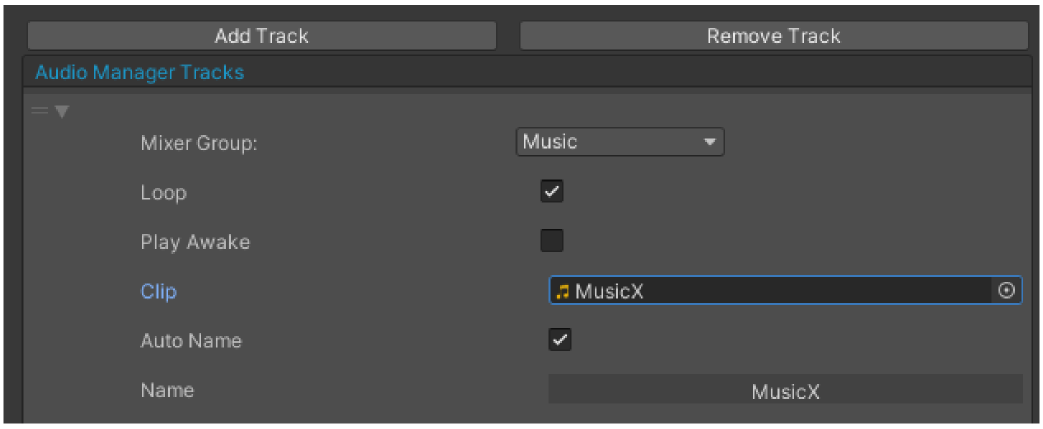
- Now you can set the audio clip for the track. Select the one whose name is MusicX (All the clips are in the Tests\Runtime\AudioTests\Clips directory).



Mixer Group: Music
Loop ✓
Play Awake
Clip MusicX
Auto Name
Name
Priority
Volume
Pitch
Spatial Blend
3D Settings

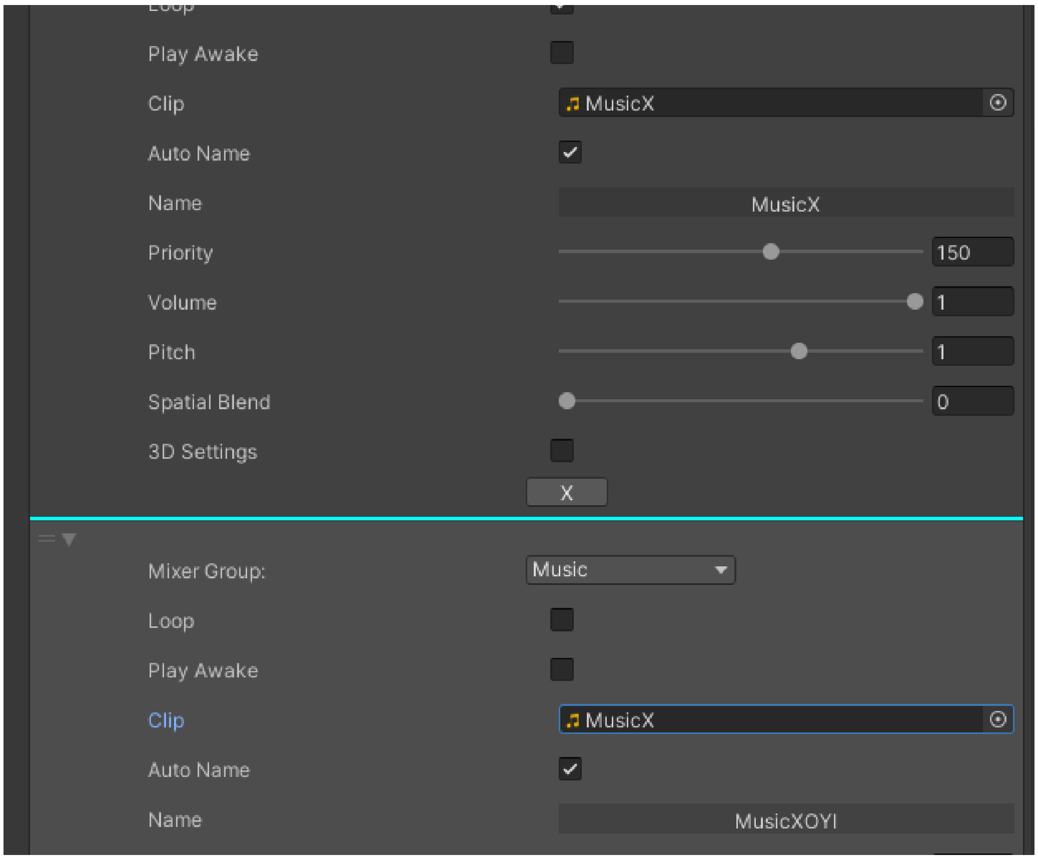
None
BossFightStart
CheckPointSound
LaserShoot
MusicX
NaveSound
retro_explosion_bass_10
retro_explosion_deep_02

- For find the clip and play it later with the other component you need a name so you can name it by your own by unchecking the auto name field, or you can leave the tool to automatically name the track with the clip name (if the name already exists the tool add a prefix to the name by using the alphabet and giving 3 random words).



Mixer Group: Music
Loop ✓
Play Awake
Clip MusicX
Auto Name ✓
Name MusicX

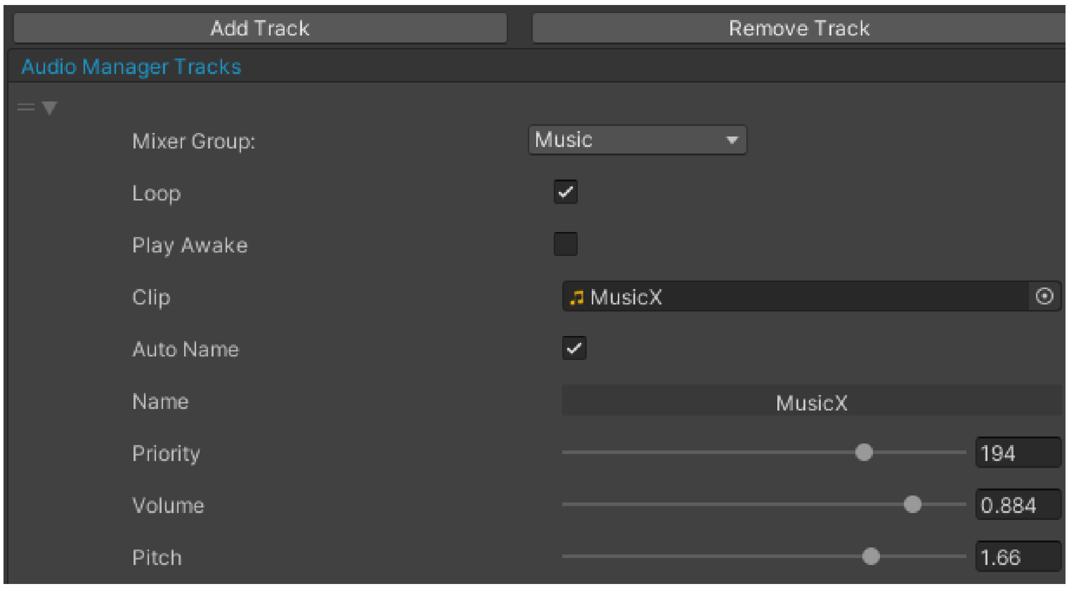
IF THE NAME IS THE SAME



Loop
Play Awake
Clip: MusicX
Auto Name ✓
Name: MusicX
Priority: 150
Volume: 1
Pitch: 1
Spatial Blend: 0
3D Settings
X

Mixer Group: Music
Loop
Play Awake
Clip: MusicX
Auto Name ✓
Name: MusicXOYI

- Now you have some basic fields like the priority, volume and the pitch, set them as you want.

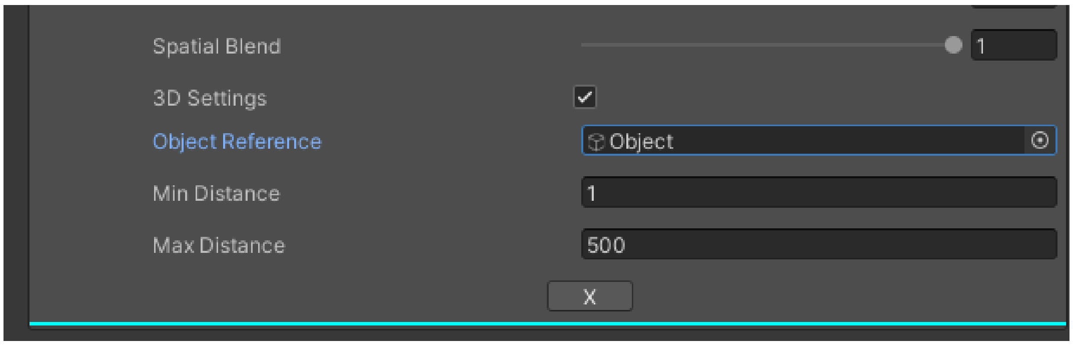


Add Track | Remove Track

Audio Manager Tracks

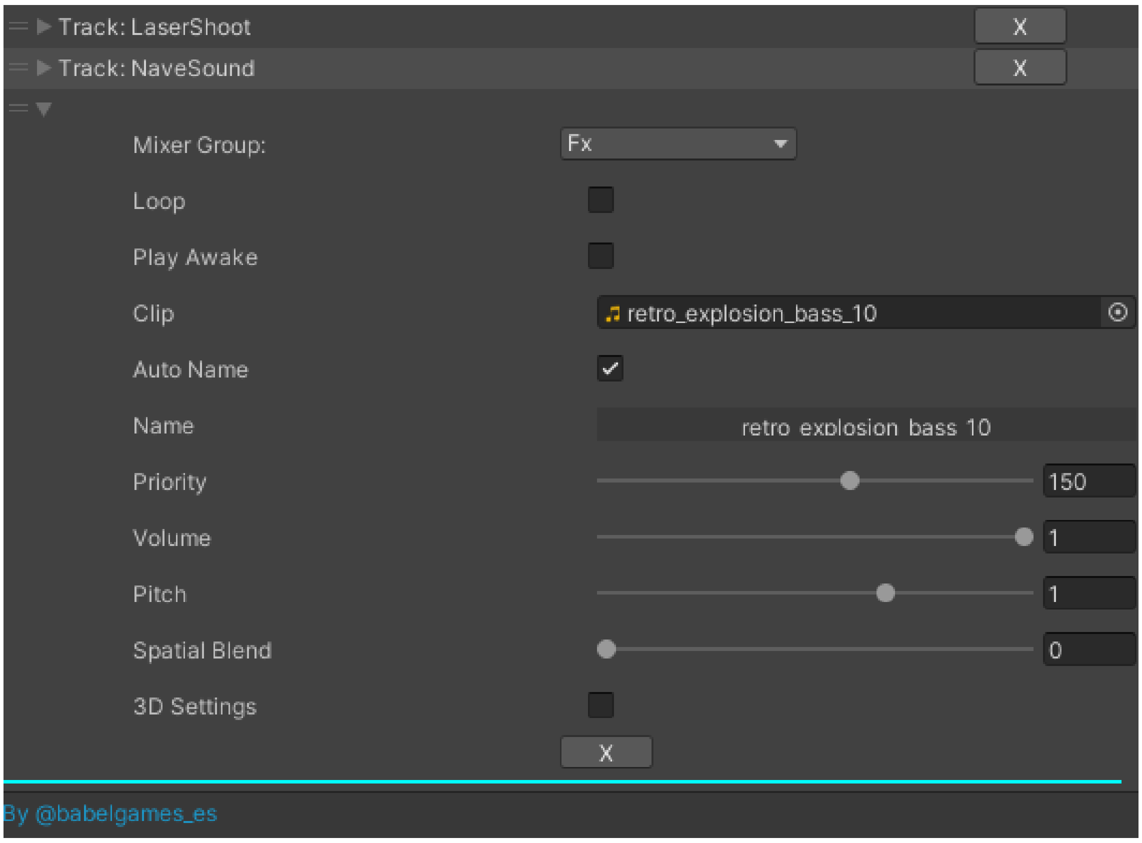
Mixer Group: Music
Loop ✓
Play Awake
Clip: MusicX
Auto Name ✓
Name: MusicX
Priority: 194
Volume: 0.884
Pitch: 1.66

- Now you have the option to make the track a 3D track.
  Just check the 3D Settings field and you would see the object reference in which you want to create the audio source, and the min and max distance of the audio. You have to set the Spatial Blend field to 1 too.



Spatial Blend	1
3D Settings	✓
Object Reference	Object
Min Distance	1
Max Distance	500

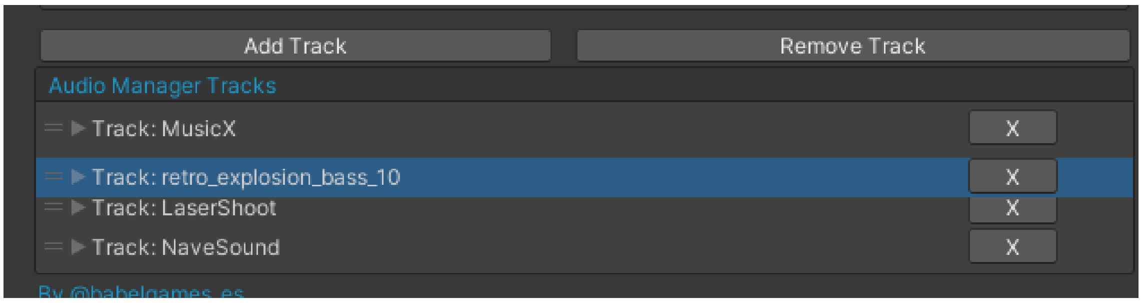
Now set 3 more clips as Fx without loop and without 3D settings in the same way.



Track: LaserShoot
Track: NaveSound

Mixer Group:	Fx
Loop	
Play Awake	
Clip	retro_explosion_bass_10
Auto Name	✓
Name	retro explosion bass 10
Priority	150
Volume	1
Pitch	1
Spatial Blend	0
3D Settings	

Notice that you can reorder the list of tracks if you want for greater organization. Just click at the three bars at the left of the track and drag it to the position that you want.

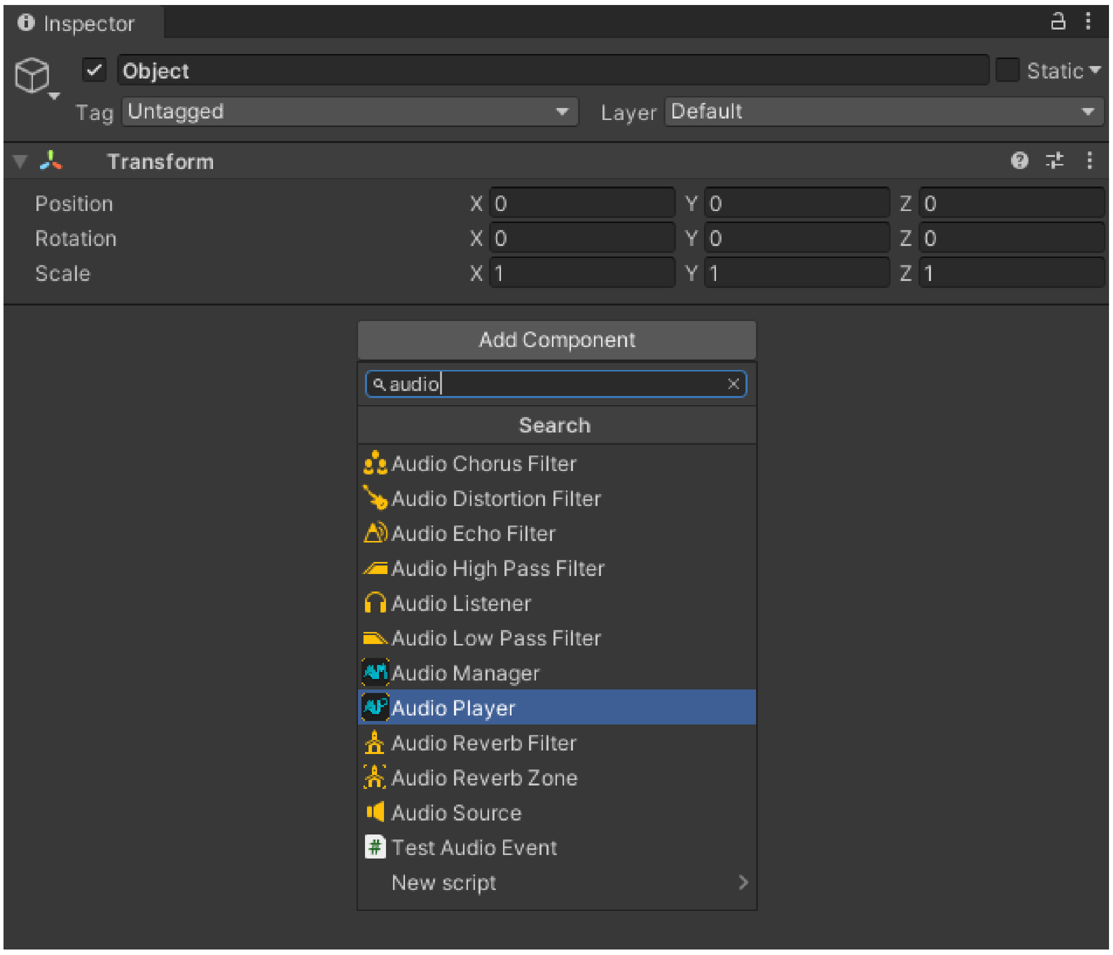


If you want to remove tracks you have the remove button for removing the last one at the track list, or you can use the X button for removing the actual track (both open and close).

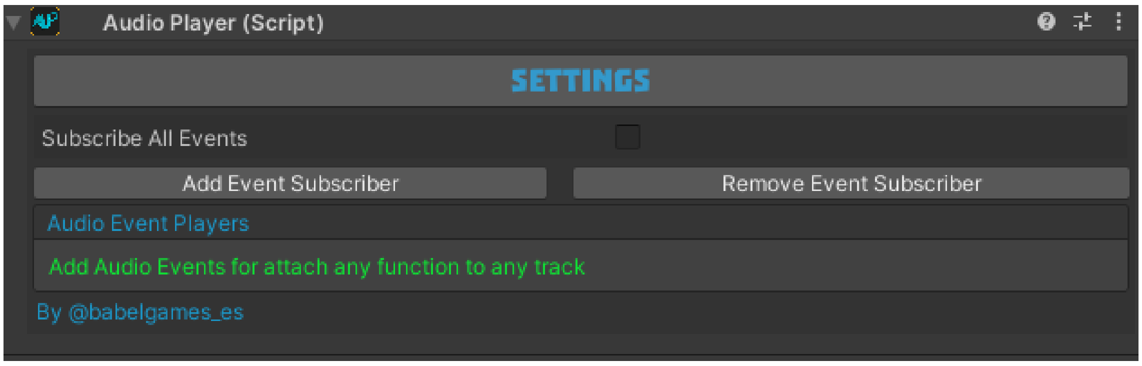
With all the tracks configured, now you can start with the other component of the Audio Tool.

Audio Player

First, add the Audio Player component to the Object at the scene.


Inspector
Object
Static
Tag Untagged
Layer Default
Transform
Position X 0 Y 0 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1
Add Component
audio
Search
Audio Chorus Filter
Audio Distortion Filter
Audio Echo Filter
Audio High Pass Filter
Audio Listener
Audio Low Pass Filter
Audio Manager
Audio Player
Audio Reverb Filter
Audio Reverb Zone
Audio Source
Test Audio Event
New script

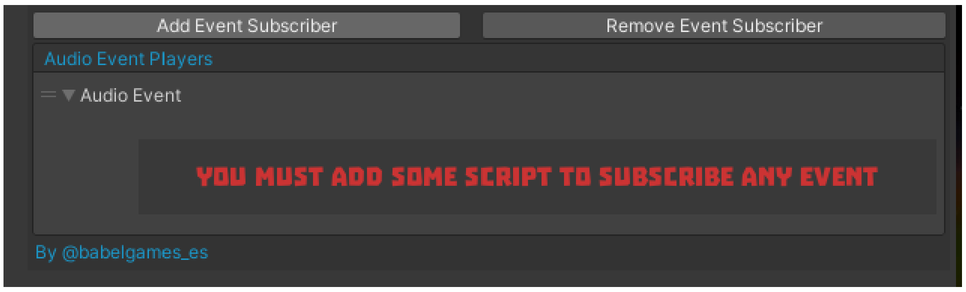
This is the first look of the component.


Audio Player (Script)
SETTINGS
Subscribe All Events
Add Event Subscriber
Remove Event Subscriber
Audio Event Players
Add Audio Events for attach any function to any track
By @babelgames_es

Manual Event Creation

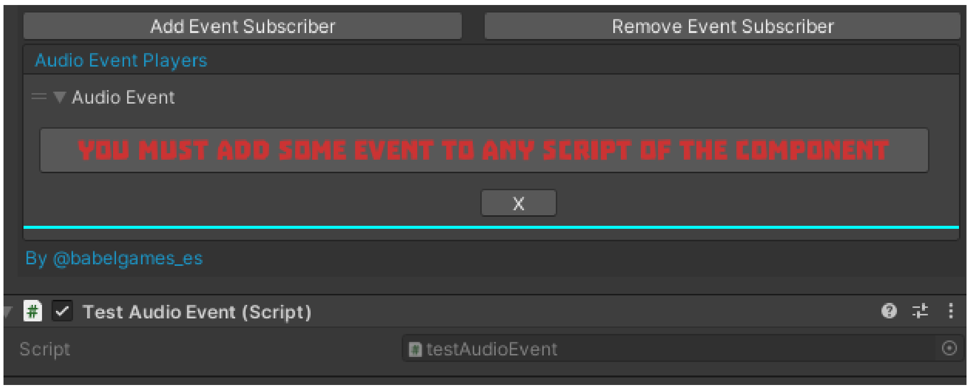
Now you have two options:

- You can add an audio event player to subscribe any event (at any script attached into the actual GameObject) to the play method (searching the track by the name, and play it when the event is invoked).
  - First add the audio event subscriber.



YOU MUST ADD SOME SCRIPT TO SUBSCRIBE ANY EVENT

  - Now add the script in which you have the events. For this example, you are going to learn how to declare and invoke an event, so add the testAudioEvent script and open the script.



YOU MUST ADD SOME EVENT TO ANY SCRIPT OF THE COMPONENT

Script testAudioEvent

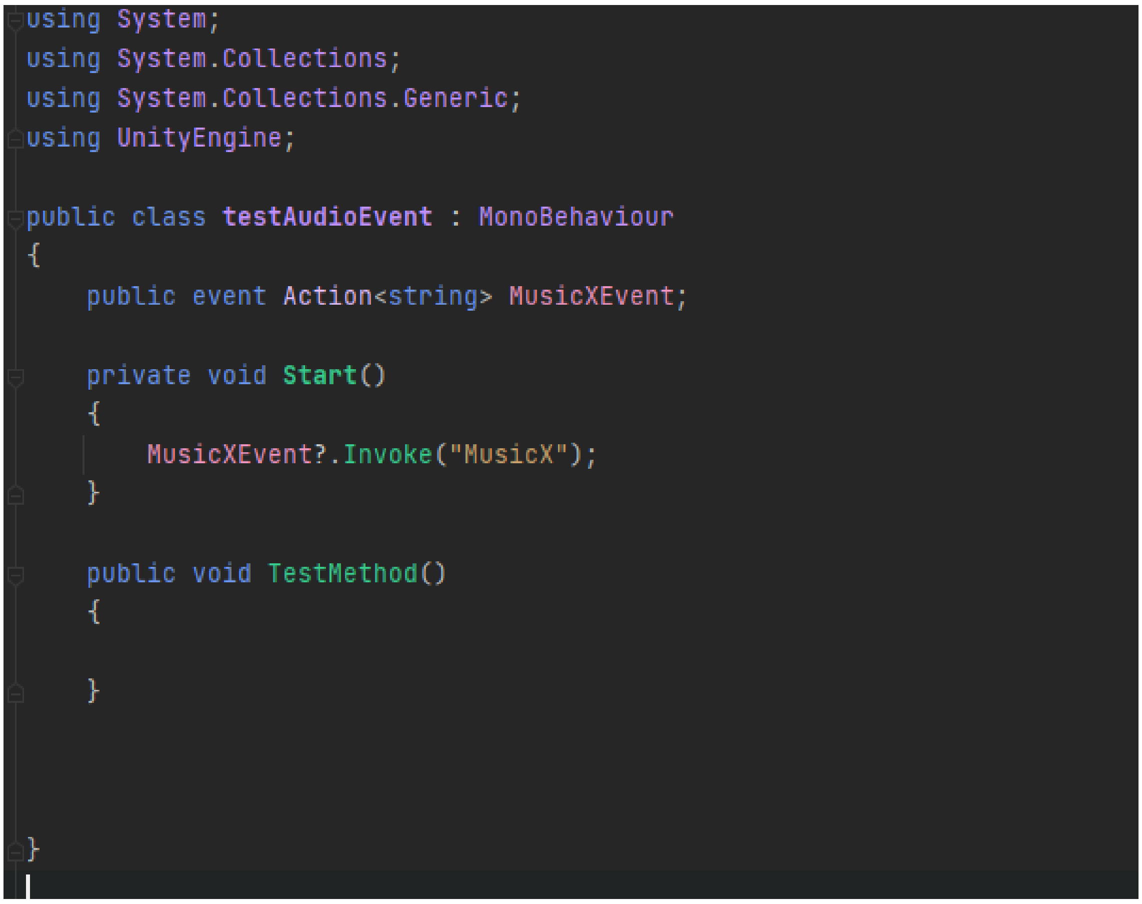
First create the event (we are going to create an event for the music track):

```
public event Action<string> someEvent;
```

Then invoke the event in the method that you want:

```
private void SomeMethod()
{
    someEvent?.Invoke("MusicX");
}
```

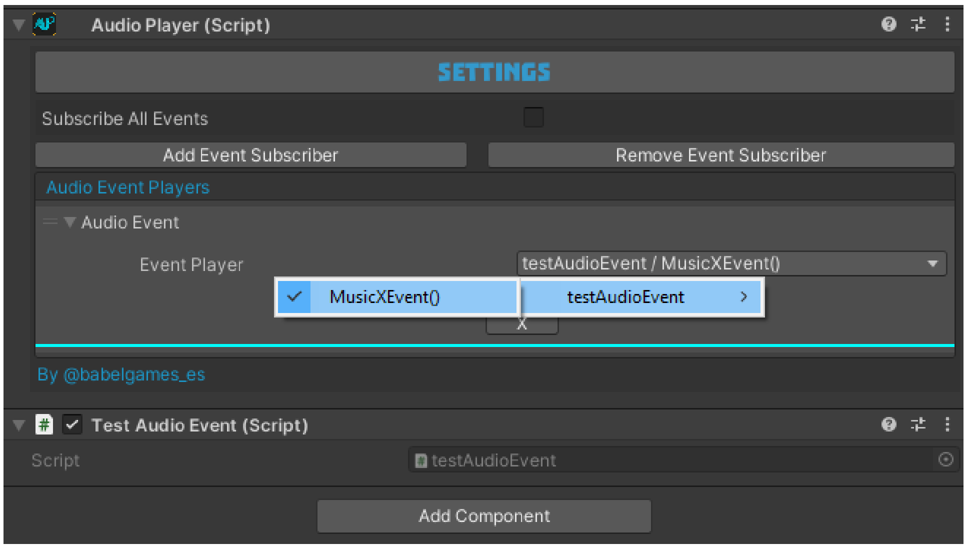
- Create the event and invoke it at the start method.



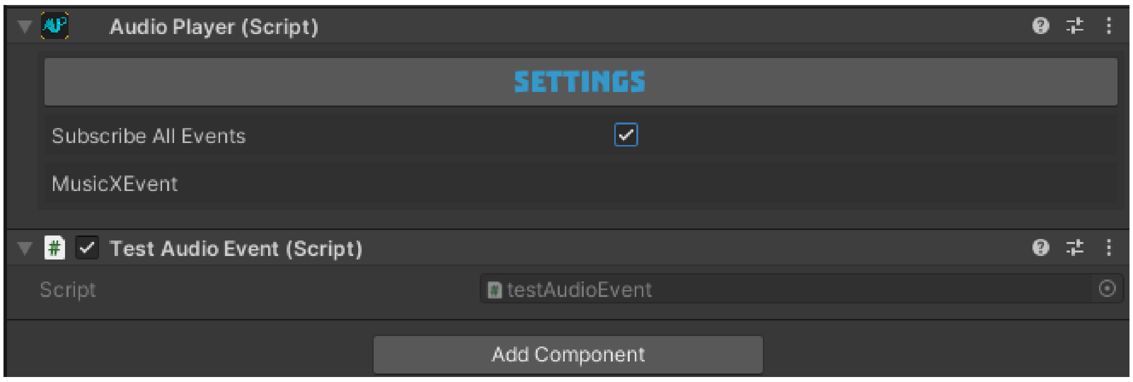
```
using System;
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class testAudioEvent : MonoBehaviour
{
    public event Action<string> MusicXEvent;

    private void Start()
    {
        MusicXEvent?.Invoke("MusicX");
    }

    public void TestMethod()
    {

    }



}
```

Notice that you need the system namespace for declare events

- Then you can return to the AudioPlayer component and select the event you want to subscribe at the audio event subscriber (For subscribe events one by one). The power of that tool is that it will find all the matches events at all the scripts attached to the actual GameObject.



- The other option is that you can check the "Subscribe All Events" option for subscribe all the events that the component founds at any script attached into the actual GameObject (Only matches the event with this structure: Action<string>)

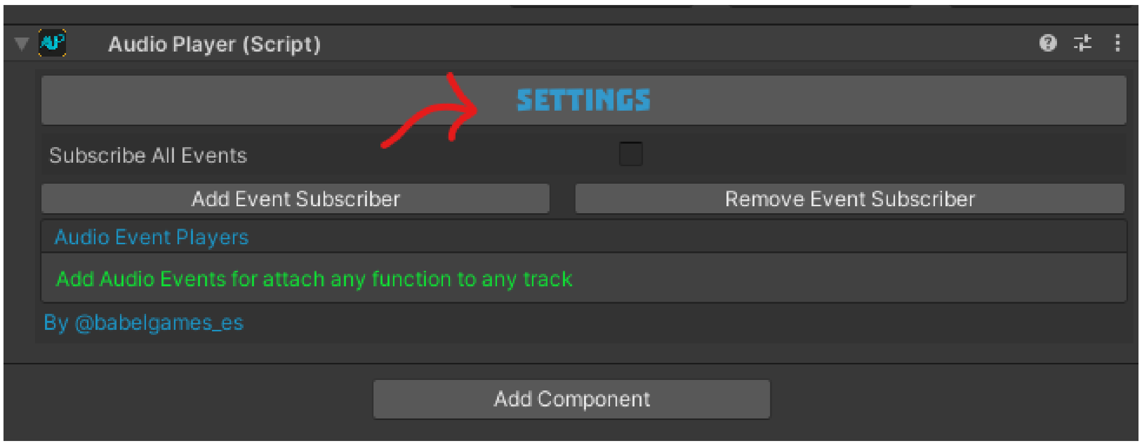


By using any of these options you must create and invoke the events on your own.

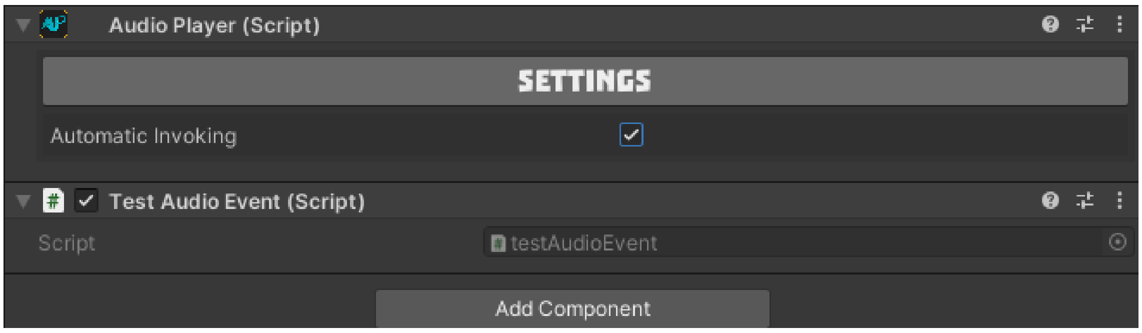
You have another option.

Automatic Event Creation

To get access to this implementation, open the settings window by clicking at the SETTINGS button.



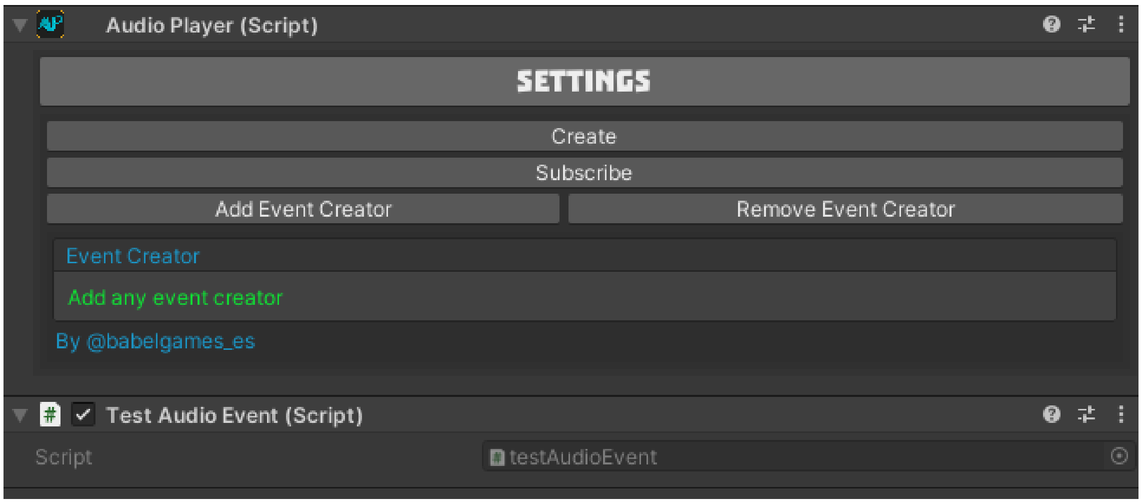
Check the Automatic Invoking option, for use the Automatic Event Creation.



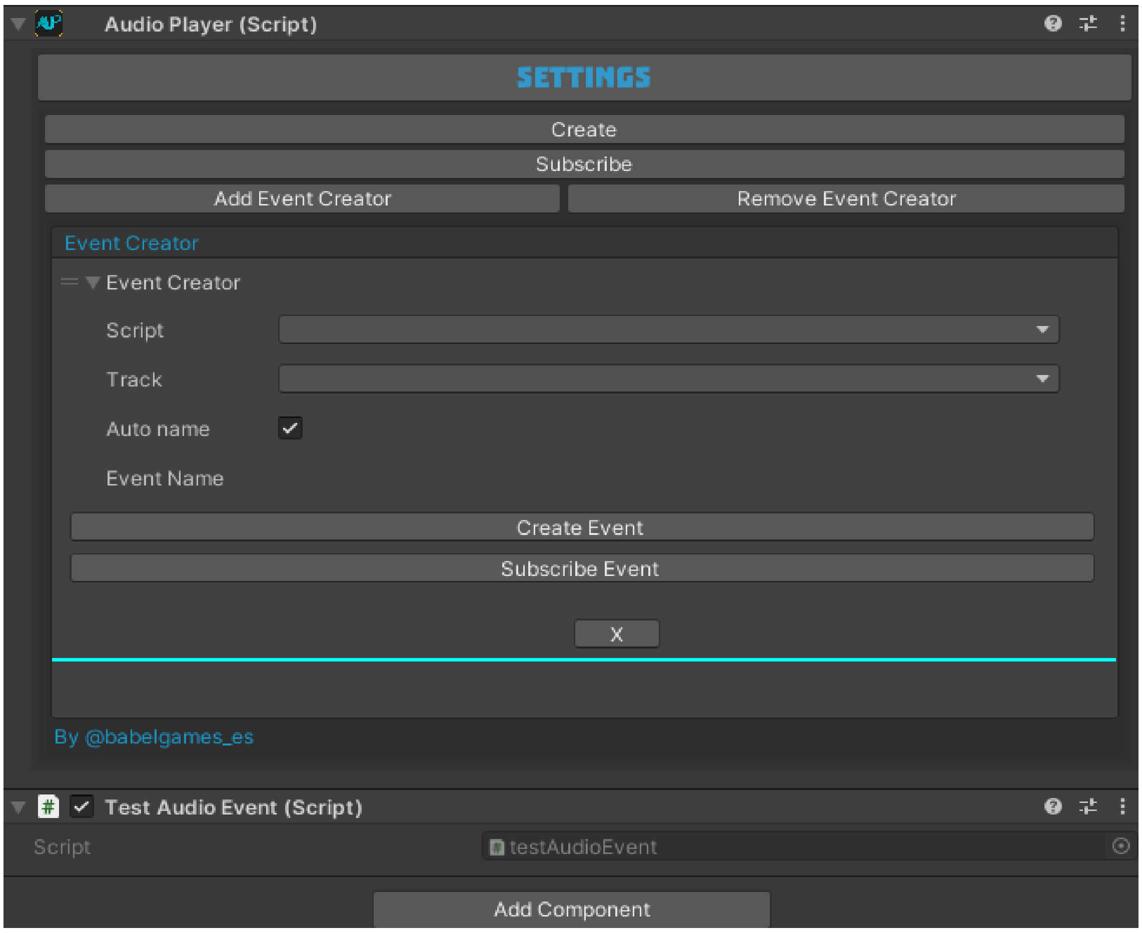
Once you check it, now you can close the settings window by clicking again at the same button.

With this implementation the component takes all the information of the track and the event and overwrites the selected script at the actual GameObject with the newest events.

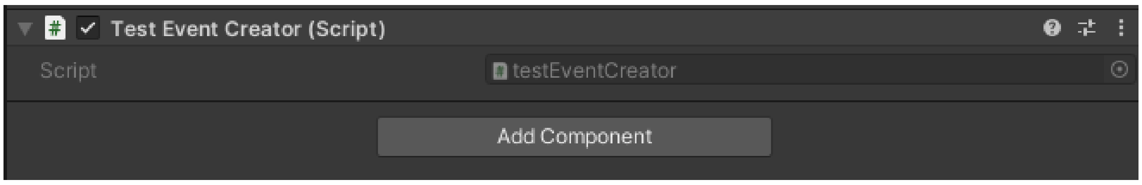
Close the settings window and take a look at the Event Creator window.



Now you can add Event Creators for each event that you want to create and subscribe to any script into the actual GameObject.

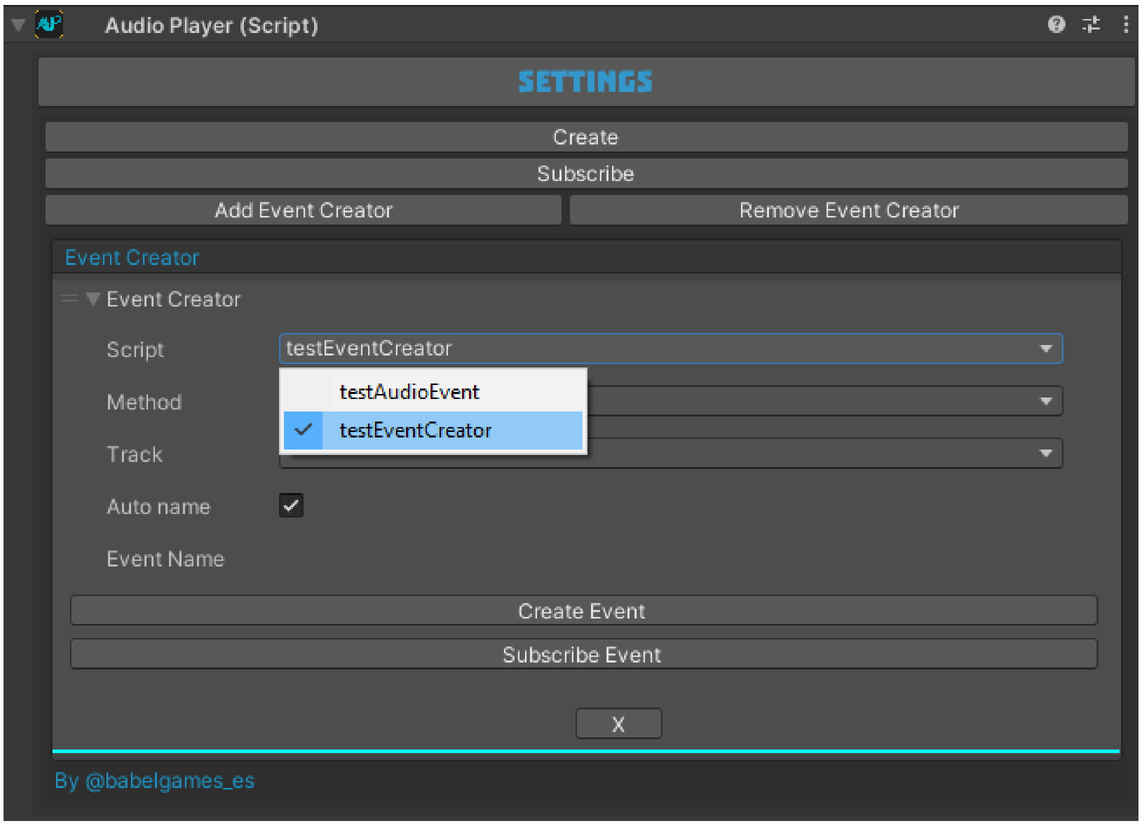


For this part of the tutorial, we are going to add another test script called testEventCreator.

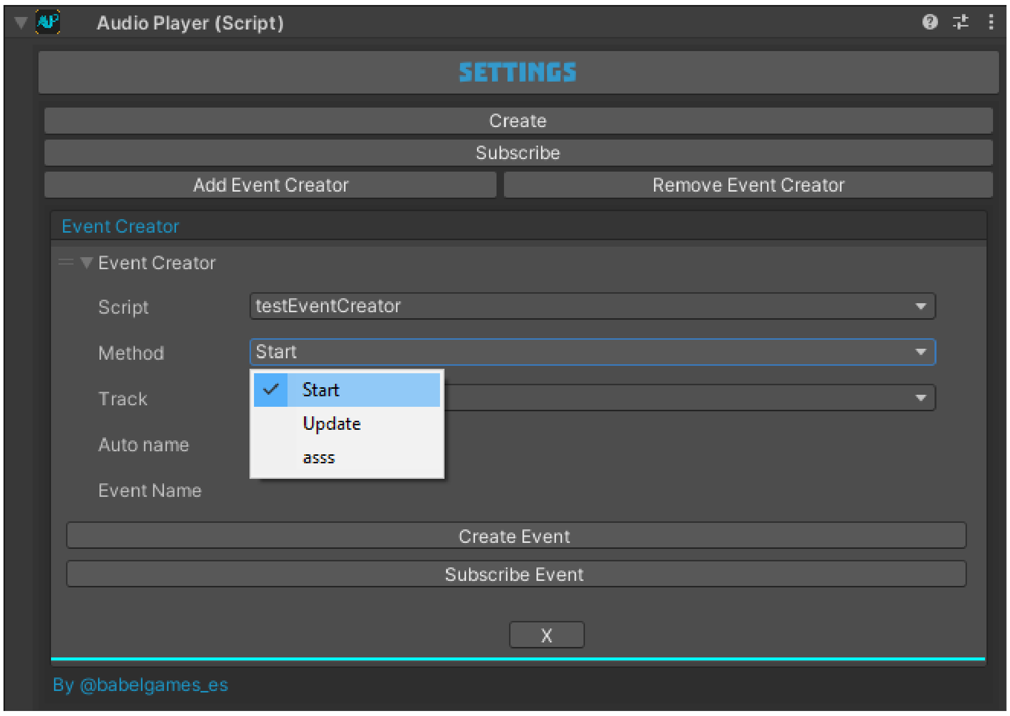


Now we are going to create all the events for the Fx tracks previously configured at the AudioManager component.

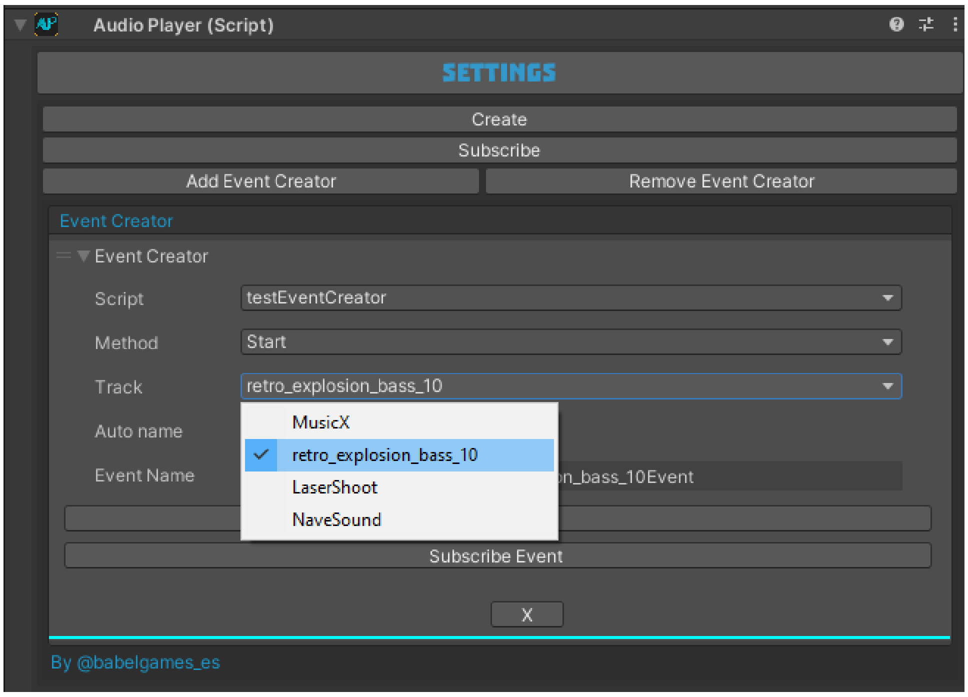
- First select the script in which you want to create the events.



- Now select the method in which you want to create the invoke of the event (the track would sound when the method is called).

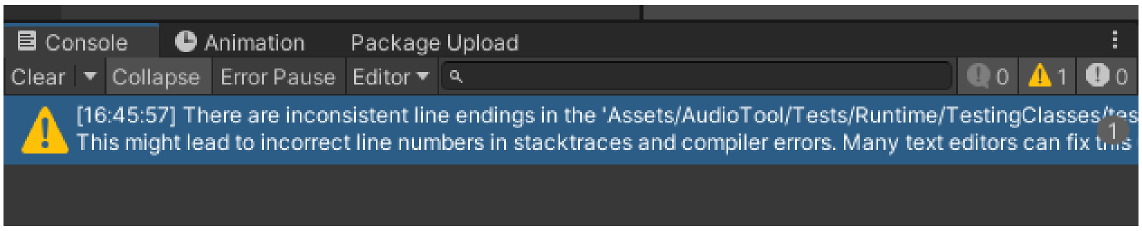


- Finally, you have to select the track that you want to play at the event. You can leave the component to automatically name the event as [track name + Event], or you can name it on your own by unchecking the Auto name field.



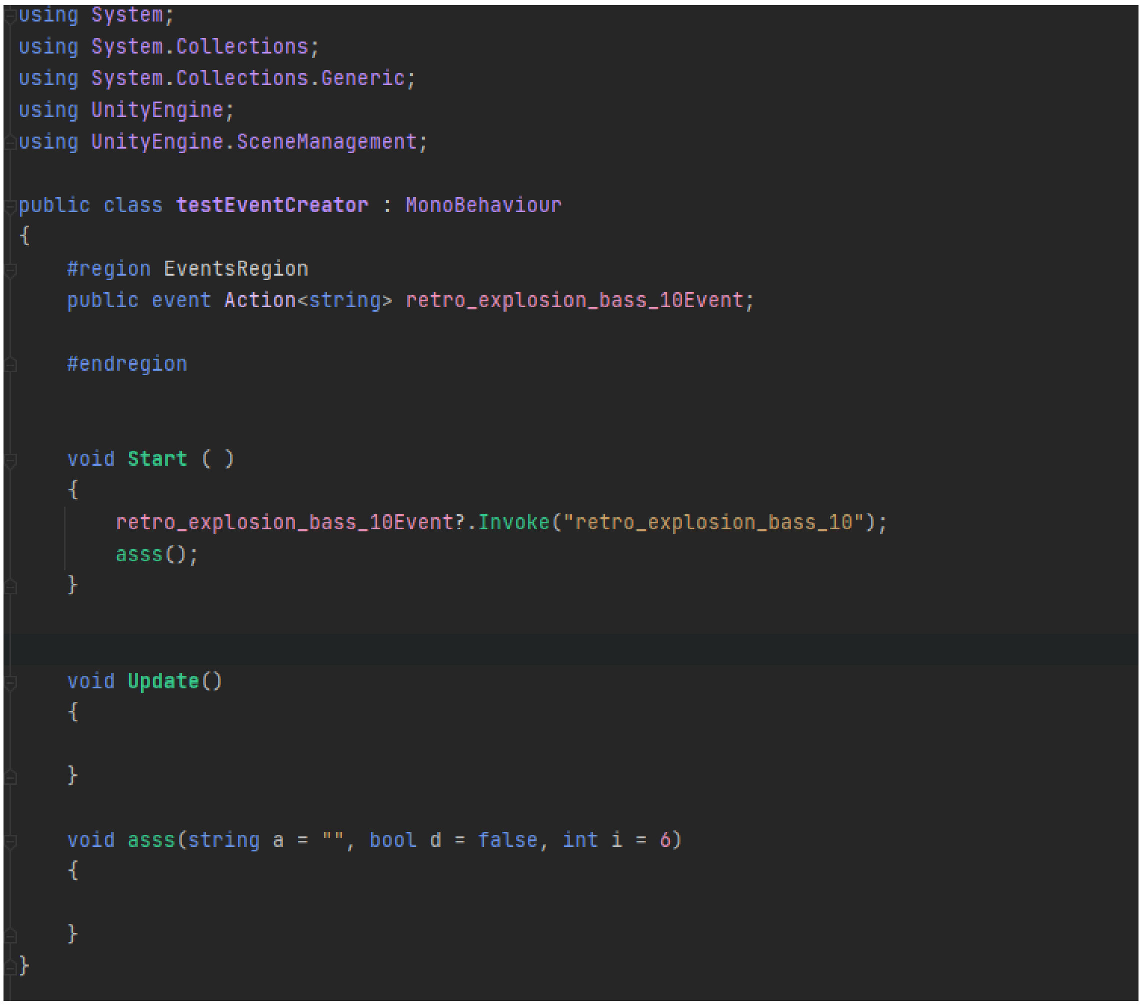
You can now create this event by using the Create Event button which creates the actual event, or the Create button which creates all the events of the list.

A warning message like this will appear, but do not be alarmed because we have overwritten the script and have reworked the assets folder.



```
[16:45:57] There are inconsistent line endings in the 'Assets/AudioTool/Tests/Runtime/TestingClasses/tes
This might lead to incorrect line numbers in stacktraces and compiler errors. Many text editors can fix this
```

Just clear the console and check that everything is correct in the script.

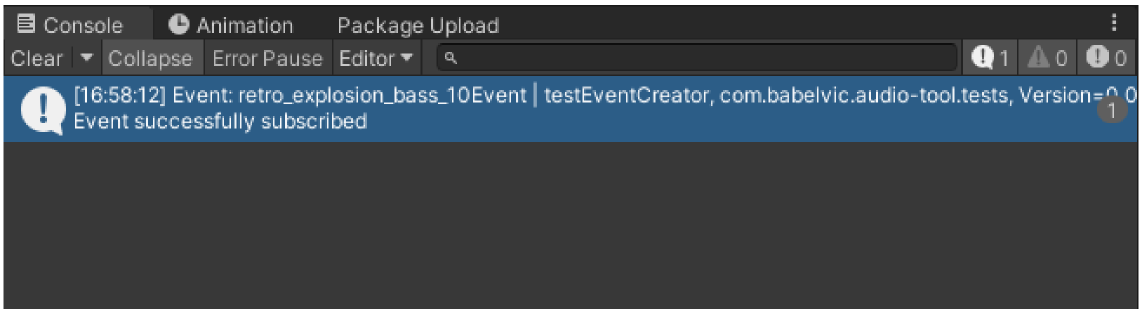


```
using System;
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.SceneManagement;

public class testEventCreator : MonoBehaviour
{
    #region EventsRegion
    public event Action<string> retro_explosion_bass_10Event;

    #endregion


    void Start ( )
    {
        retro_explosion_bass_10Event?.Invoke("retro_explosion_bass_10");
        asss();
    }


    void Update()
    {

    }

    void asss(string a = "", bool d = false, int i = 6)
    {

    }
}
```

As you can see all is good, now you can see the real power of this tool. You can manage all the audio of the project without programming at any time.

Now with that done, it's time to subscribe to this event, so click at the Subscribe Event button for subscribe the actual event or in the Create button for subscribe all.

A message will appear with information of the event subscribed and a confirmation that the subscription has been successfully completed.

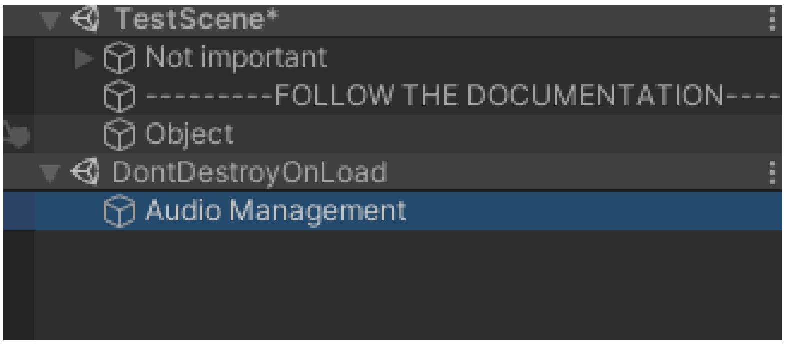


```
[16:58:12] Event: retro_explosion_bass_10Event | testEventCreator, com.babelvic.audio-tool.tests, Version=0.0
Event successfully subscribed
```

But you don't have to trust in me, test it by playing the game and check that the subscribed event is played correctly. If you want to test the other implementation, remember that you have to return to the other window and select the event or subscribe to all the events.

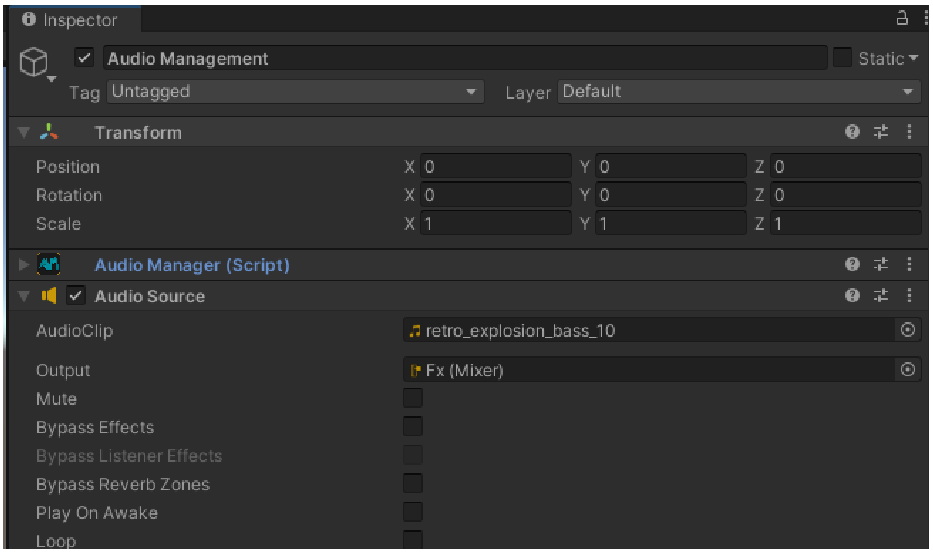
Notice when you play the game that the audio sources will be setted at the object with the AudioManager component (Which implements a singleton pattern to persist between scenes), or at the object referenced in the 3D Settings.

Don't destroy on load because of the singleton pattern.



TestScene*
Not important
---------FOLLOW THE DOCUMENTATION----
Object
DontDestroyOnLoad
Audio Management

The sources with 2D configuration.



Inspector
Audio Management ✓ Static
Tag Untagged Layer Default

Transform

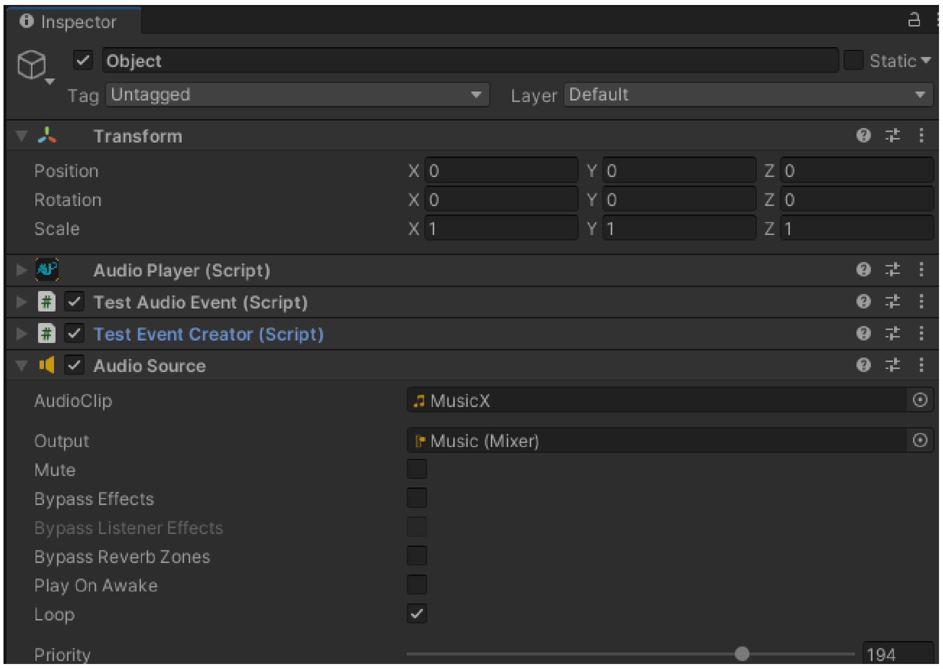
Position	X 0	Y 0	Z 0
Rotation	X 0	Y 0	Z 0
Scale	X 1	Y 1	Z 1

Audio Manager (Script)

Audio Source ✓

AudioClip	retro_explosion_bass_10
Output	Fx (Mixer)
Mute	
Bypass Effects	
Bypass Listener Effects	
Bypass Reverb Zones	
Play On Awake	
Loop	

The sources with 3D configuration at the object referenced.



Inspector
Object ✓ Static
Tag Untagged Layer Default

Transform

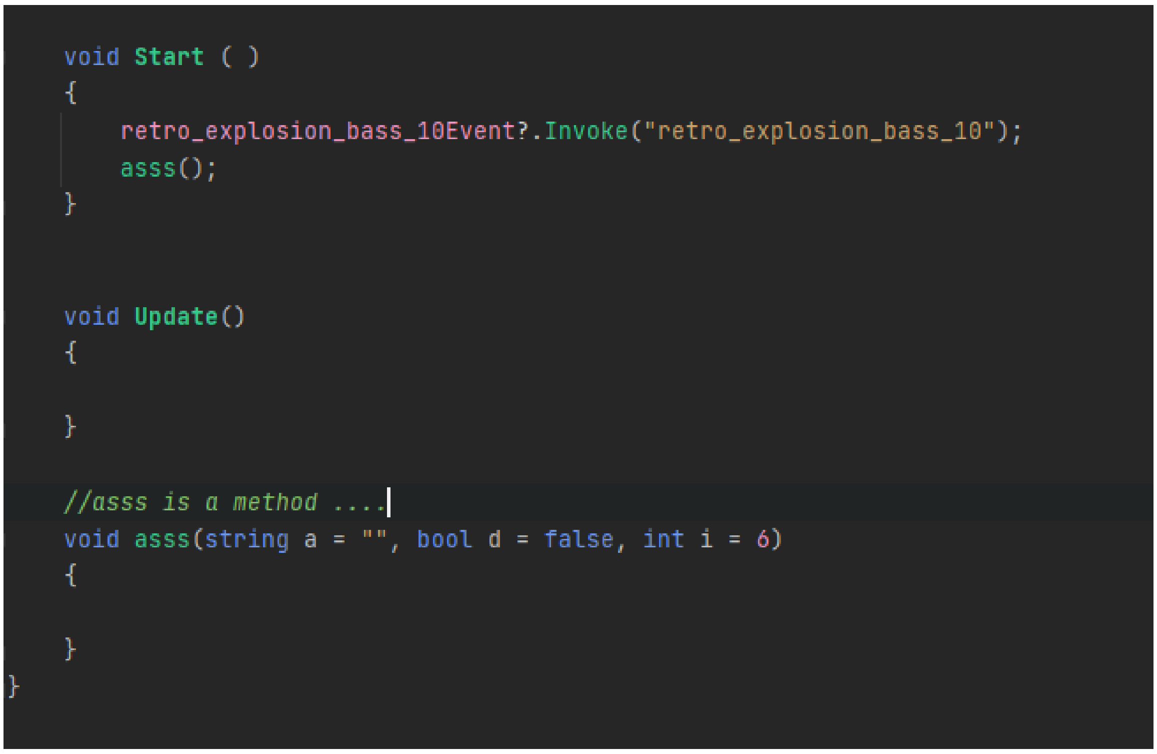
Position	X 0	Y 0	Z 0
Rotation	X 0	Y 0	Z 0
Scale	X 1	Y 1	Z 1

Audio Player (Script)
Test Audio Event (Script) ✓
Test Event Creator (Script) ✓
Audio Source ✓

AudioClip	MusicX
Output	Music (Mixer)
Mute	
Bypass Effects	
Bypass Listener Effects	
Bypass Reverb Zones	
Play On Awake	
Loop	✓
Priority	194

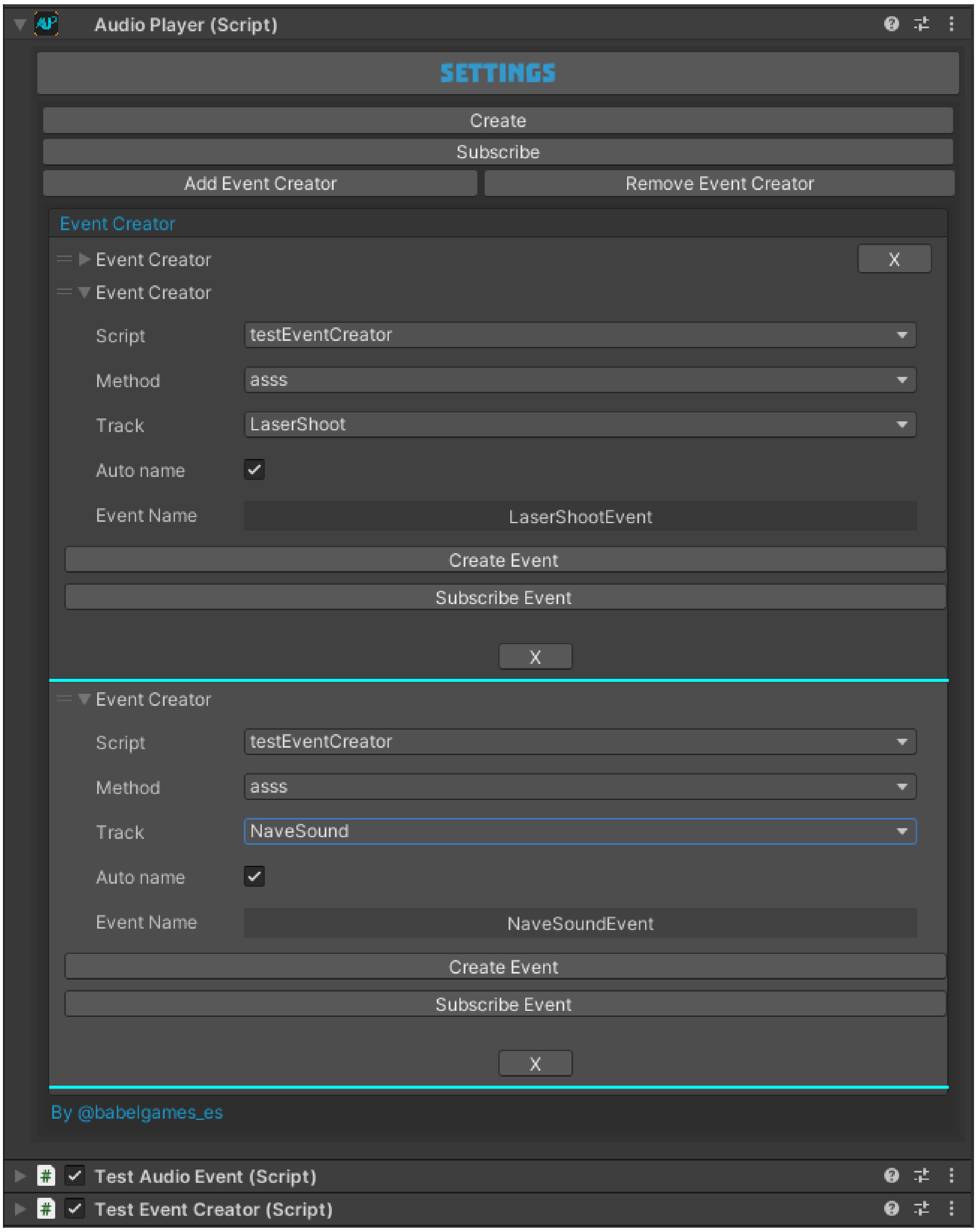
Another incredible feature of the automatic event creation is that you can have a method with parameters or with invocations or with comments with the same name before the method, but the component will find the method anyways.

Like in that case:



```
    void Start ( )
    {
        retro_explosion_bass_10Event?.Invoke("retro_explosion_bass_10");
        asss();
    }


    void Update()
    {

    }

    //asss is a method ....
    void asss(string a = "", bool d = false, int i = 6)
    {

    }
}
```

For the test, we are going to create the other events of the Fx sounds at the asss method of the same testEventCreator script.



Audio Player (Script)

SETTINGS

Create
Subscribe
Add Event Creator | Remove Event Creator

Event Creator

Event Creator X

Event Creator

Script: testEventCreator
Method: asss
Track: LaserShoot
Auto name: ✓
Event Name: LaserShootEvent

Create Event
Subscribe Event
X

Event Creator

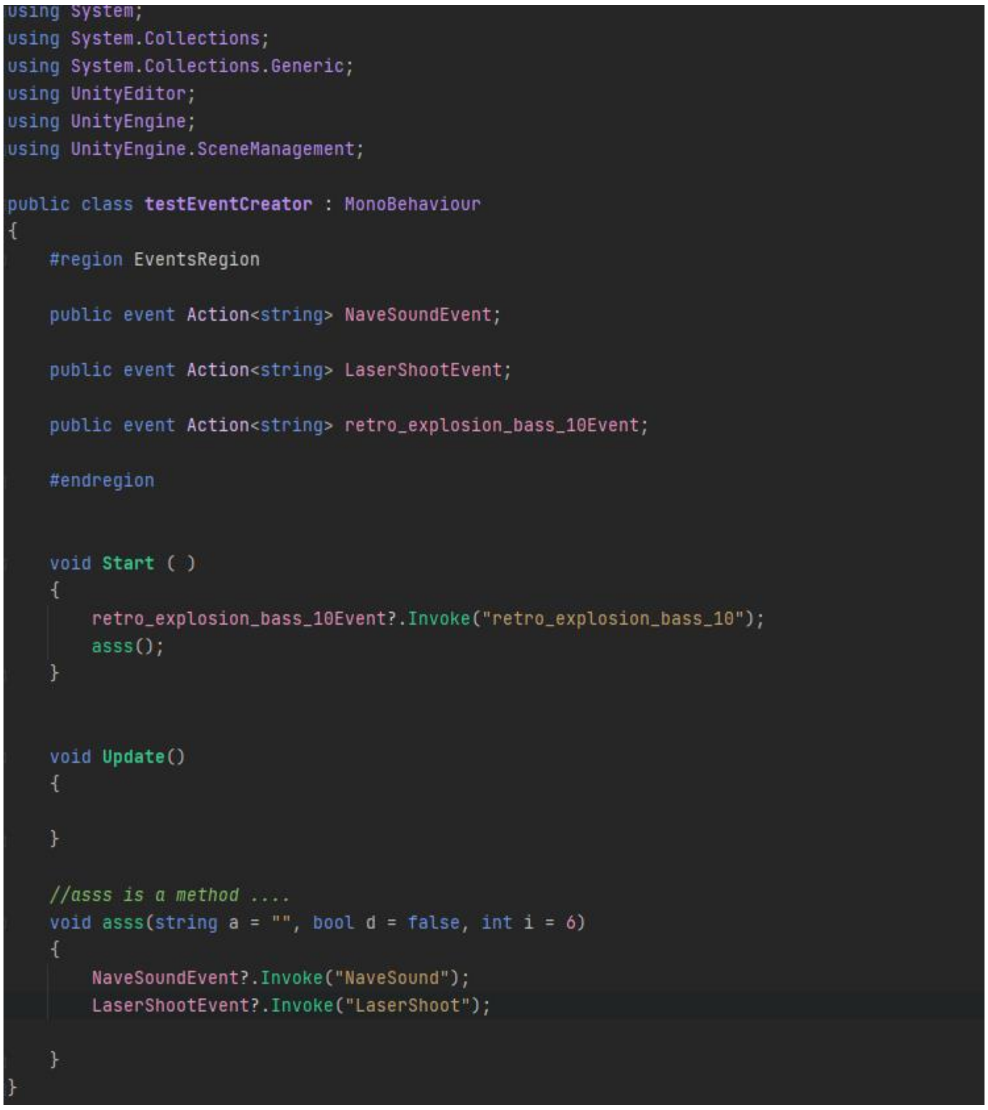
Script: testEventCreator
Method: asss
Track: NaveSound
Auto name: ✓
Event Name: NaveSoundEvent

Create Event
Subscribe Event
X

By @babelgames_es

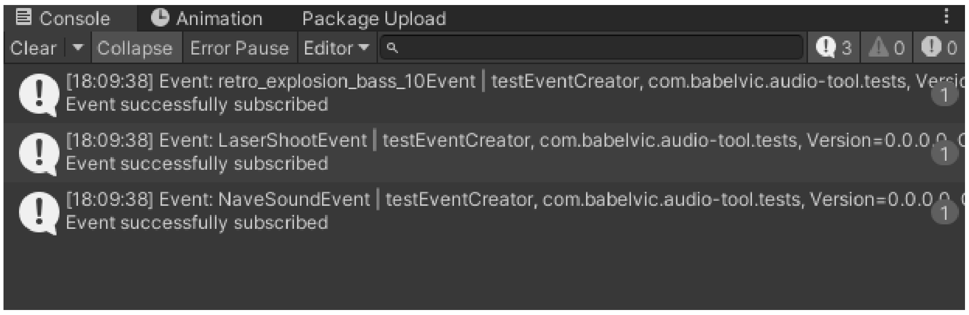
Test Audio Event (Script)
Test Event Creator (Script)

Test the Create button, it would create only the events that don't already exist at the selected script. As you can see all the events are created correctly.



```
using System;
using System.Collections;
using System.Collections.Generic;
using UnityEditor;
using UnityEngine;
using UnityEngine.SceneManagement;

public class testEventCreator : MonoBehaviour
{
    #region EventsRegion

    public event Action<string> NaveSoundEvent;

    public event Action<string> LaserShootEvent;

    public event Action<string> retro_explosion_bass_10Event;

    #endregion


    void Start ( )
    {
        retro_explosion_bass_10Event?.Invoke("retro_explosion_bass_10");
        asss();
    }


    void Update()
    {

    }

    //asss is a method ....
    void asss(string a = "", bool d = false, int i = 6)
    {
        NaveSoundEvent?.Invoke("NaveSound");
        LaserShootEvent?.Invoke("LaserShoot");

    }
}
```

And subscribe them all too with the Subscribe button.



```
[18:09:38] Event: retro_explosion_bass_10Event | testEventCreator, com.babelvic.audio-tool.tests, Versio
Event successfully subscribed                                                                        1
[18:09:38] Event: LaserShootEvent | testEventCreator, com.babelvic.audio-tool.tests, Version=0.0.0.0, C
Event successfully subscribed                                                                        1
[18:09:38] Event: NaveSoundEvent | testEventCreator, com.babelvic.audio-tool.tests, Version=0.0.0.0, C
Event successfully subscribed                                                                        1
```

That's all for now, now enjoy the tool :)